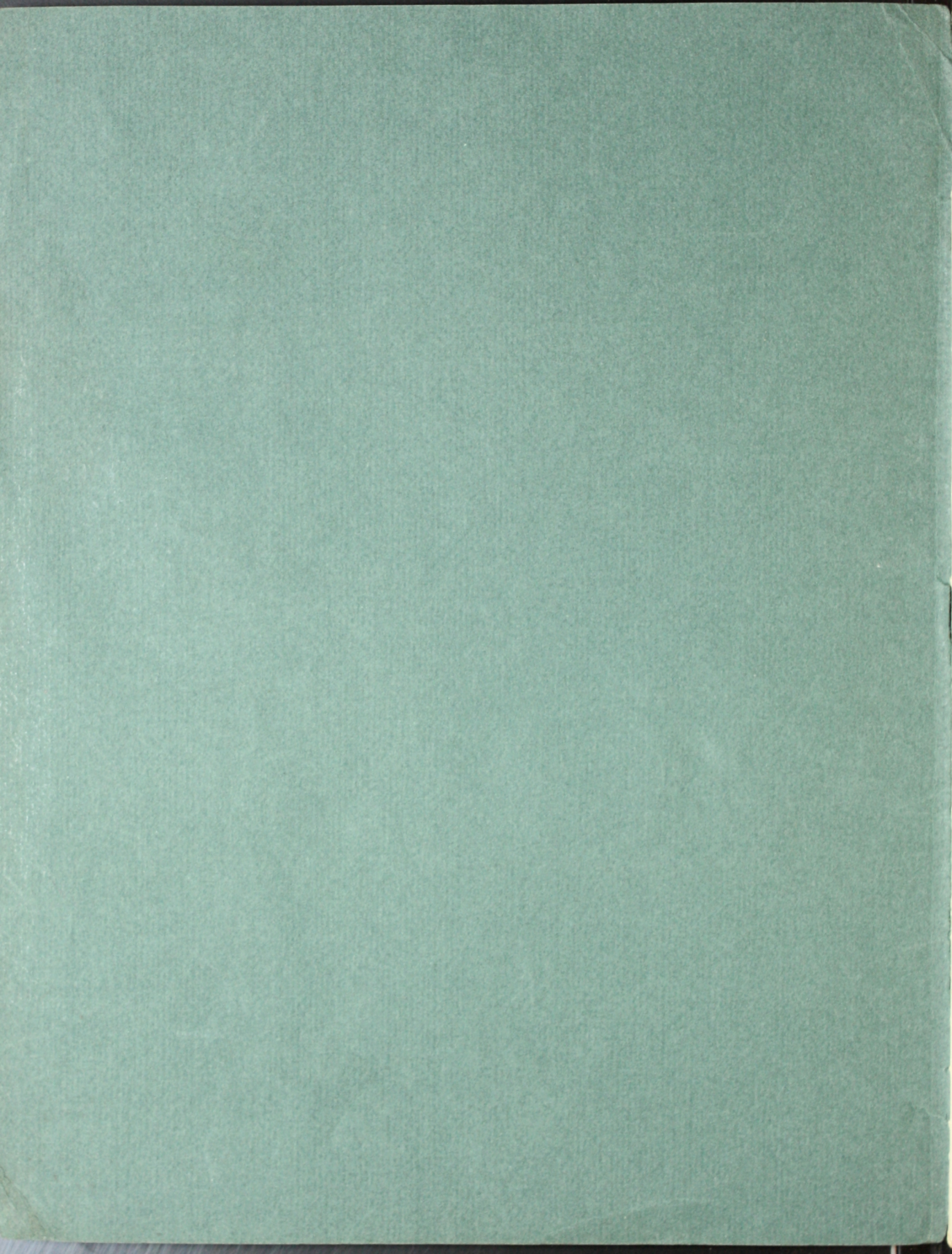


PORTLAND CEMENT
STUCCO



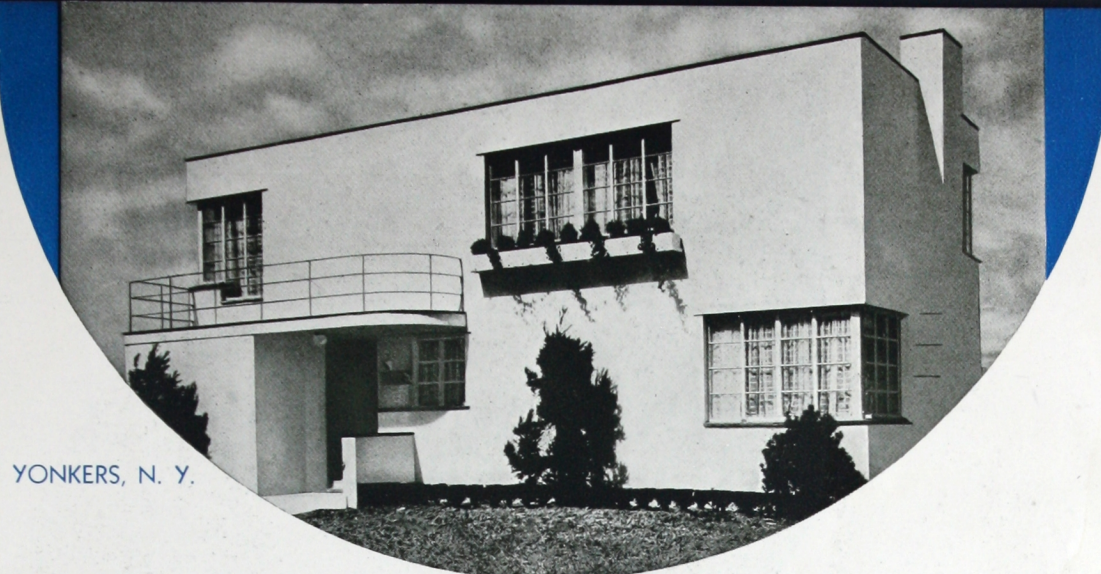
PORTLAND CEMENT STUCCO



PORTLAND CEMENT ASSOCIATION



MINNEAPOLIS, MINN.



YONKERS, N. Y.

PORTLAND CEMENT STUCCO

THE purpose of this book is to present briefly and pictorially, good practice in the preparation, application and decorative possibilities of portland cement stucco. We believe it will be an inspiration to those who have not had the good fortune to know portland cement stucco intimately — will result in a better understanding and a fuller appreciation of the many inherent qualities of this versatile wall finish.

Portland cement stucco, because it is plastic when applied, can be produced in a wide range of textures, limited only by

the skill and ingenuity of the craftsman. Whatever the style of architecture selected, a texture may be used which will harmonize with it; will accentuate its beauty.

For example, a smooth finish adds to the charm and simplicity of colonial architecture; a feathered, irregular finish emphasizes and seems to become an integral part of the English design; a smoothly irregular surface representing the attempt to apply smooth plaster by hand over adobe walls reflects the Spanish influence. There is a texture to suit the Modern American, French, Italian and other popular architec-



CINCINNATI, OHIO

P.O. 15828 TC

• FRENCH



tural styles. These finishes have been appropriately named to fit the architecture with which they are identified.

Colors too, can be produced to harmonize with the architecture of the building and its surroundings. Pastels or brilliant hues in whatever tint or shade desired may be produced by adding mineral pigments in the finish coat. Two or more colors may be combined to produce interesting blended or polychrome effects; the range of harmonious texture and color combinations is unlimited.

Portland cement stucco is often referred to as "concrete" stucco. It contains the same basic materials and has the same desirable qualities—great strength; ability to withstand all kinds of

• SPANISH





• MODERN

weather; is fire resistant; will not decay. It is not surprising, therefore, that portland cement stucco jobs built 30 or more years ago look as good at present as the day they were built—promise to give many more years of care-free protection plus continued attractive appearance.

The first requisite of a good stucco job is the use of portland cement stucco. This, combined with proper workmanship as described on the following pages, will assure satisfactory results. It is our sincere wish that this book may help to standardize the practice of portland cement stucco application—may suggest to the owner and architect appropriate texture and color combinations, so that its many advantages may be fully attained.

Portland Cement Association

• MEXICAN



$3\frac{1}{2} \times 5 = 10\frac{1}{2}$ on 2 = $3\frac{1}{2} \times 5\frac{1}{2}$



REDUCED FROM A 36 BY 42 INCH AREA OF WALL

SPANISH

One of the many possible combinations of color and texture. The texture and deep tones of pink and buff reflect vividly the Moorish influence. They suggest the patio, grilled windows and a balcony.

SPANISH

IN CREATING this texture the application of the finish coat mortar is heavy. The strokes of the trowel occur in all directions, upward to right and left, as well as occasional horizontal and vertical cross strokes, as shown. To the experienced plasterer these varied strokes might denote the work of an amateur, but nevertheless such is the way in which the effect of this texture is obtained. A trowel with rounded corners (Fig. 1) is used to prevent straight line-markings from appearing in the finish. The directions of the strokes are curved and varied. A full trowel of mortar is spread with each stroke as shown in the first few pictures. This builds up a texture of rolling ridges and hollows (Fig. 2) giving the effect of a coat of plaster thinly applied over a wall of crude stones.

After a fairly large area of wall is covered and before the mortar has completely hardened the surface is tooled down (Fig. 4) with the rounded trowel. This smooths over the hanging ledges of mortar and closes the surface pores to some extent, yet leaves the wavy effect that is very apparent when light strikes shadows across the surface. No finish troweling should be done that will break down or smooth out these hillocks. Best results are obtained by using a fairly stiff mortar which stands as placed by the trowel. A good suction in the brown-ing coat will help considerably in accomplishing this.



Using a round-cornered trowel



Strokes in all directions



Irregular overlapping

Finishing with the trowel





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MEXICAN

Rich colors in polychrome effects suggesting plaster crudely applied by hand over ancient walls. An outgrowth of the Spanish, yet heavier, with deeper colors, with a touch of the rugged adobe walls of Old Mexico.

MEXICAN

VERY similar to the Spanish type of texture so far as method of application and appearance goes, is the Mexican—so called because it is as typical as any of the stucco textures most used in the Southwest. Using the rounded-corner trowel which leaves only curved lines, a rather heavy finish coat is applied (Fig. 1). The strokes are in all directions, each trowelful of mortar overlapping or crossing the one previously applied (Fig. 2).

Working over this coat brings out fantastic, irregular weavings in the surface even more so than in the Spanish texture. It is at this point that polychrome effects in coloring are introduced by adding daubs of varicolored mortar here and there and working them into the surface.

This texture should be more plastic for finishing than the Spanish as the wall is brought to an almost smooth surface (Fig. 4) by troweling. No trowel marks should be seen. Although it is not an even surface the pores of the stucco are almost completely closed by the troweling. The effect is the same as though it had been finished with the palm of the hand.



Irregular application



Working up texture



Preliminary appearance

Smoothing with trowel





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CALIFORNIAN

Spanish, and Mexican together with the subdued influence of American combine to make this texture. A rough surface of warm tan or buff rubbed with burlap, produces a pleasing irregularity for large unbroken wall surfaces.

CALIFORNIAN

A TROWEL with rounded corners is used to apply the finish mortar coat of this texture. A full trowel of mortar is used and spread in all directions (Fig. 1) allowing the sweeping applications to remain as placed without additional smoothing action. There are no straight line markings, the depressions and ridges occurring in criss-cross fashion (Fig. 2). Before the mortar hardens, the area first covered is rubbed down briskly with a wadded piece of burlap (Fig. 3). This treatment rubs off overhanging edges and any loosely attached portions of the coat and evens the whole surface to a coarse texture of wavy, irregular appearance with hills and valleys—an effect like that given in plastering over a rough stone wall.

The final treatment consists of smoothing the higher areas with a trowel, creating small, flat, smooth spots, as highlights against the relatively coarser remaining surfaces. This troweling, and to some extent the rubbing, also tends to close the pores of the stucco over the whole surface. Troweling high areas is illustrated in Fig. 4.



Creating the texture



Preliminary appearance



Rubbing with burlap

Troweling high points





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ITALIAN

Rough cast with troweling to bring out the highlights. A free use of the paler shades of pink, buff or cream is characteristic of the Italian manner; an architecture of scrolls, wreathed columns and ornamental grilles.

ITALIAN

IT IS advisable in making this texture to apply first a thin under-coat of wet mortar (Fig. 1) to insure that a uniform color will be had over the entire wall, without any spots showing which the dash coat might not cover. An ordinary whiskbroom is best for dashing, though some may prefer a bundle of light reeds for a slightly different effect. The most convenient way to handle the bucket of mortar in applying this spatter dash coat is shown in Fig. 3. Dash small quantities of mortar with quick strokes of the broom (Fig. 2). Cover only a small area—not more than 30 square feet of wall—with the dash before finishing, as it is necessary to finish this before any hardening occurs. A spatter dash coat dries out more rapidly and hardens more quickly than any other. Finishing the dash (Fig. 4) is best done by placing the trowel flat against the wall and drawing it evenly across the face of the dashed surface from left to right. A smoothing return stroke may be made to erase possible trowel marks. Variations will occur in this texture according to the time elapsing between dashing and troweling the dash, so that this time should be constant for a uniform appearance. Differently colored mortars used in the finishing and dash coats will produce a polychrome appearance when troweled.



Applying thin backing coat



Spatter dash application



Spatter dash finish

Troweling dashed surface





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ENGLISH COTTAGE

The shading of this texture is accomplished by feathering the material into minute, irregular weavings and surfaces with the edge of the trowel. The colors used are softer effects of shaded browns, greys and tans that harmonize with the steep roofs and half-timbered exteriors of the English Cottage type of architecture.

ENGLISH COTTAGE

A THIN preliminary finish coat is first applied (Fig. 1) about one-eighth inch in thickness. This is left as applied, without further troweling and forms a background coat as well as a plastic surface on which to work this final finish (Fig. 2). A small amount of mortar—about a handful—is taken on the trowel (Fig. 4). The right size of this pat of mortar for any desired variation of this finish must be found by trial. Apply with short, twisting strokes, pinching off the pat of mortar onto the surface by having the trowel at an angle to the wall as the mortar is placed (Fig. 2, 3 and 4). The strokes should be made irregularly in all directions, regardless of location. The more these strokes are varied the more beautiful is the finished texture. Avoid having too many vertical or near-vertical strokes. By twisting the trowel as the pat of mortar is applied, slightly curved ridges will be formed (Fig. 3).

Many variations of this type of texture are possible by simply varying the amounts of mortar on the trowel, the directions and lengths of the strokes, the pressure and twisting motion given the trowel. Finer, leaflike, more delicate textures are suitable for the smaller residences, while the heavier applications made with more mortar and stronger strokes and applied in a freer fashion go with the larger type of house.



Applying thin backing coat



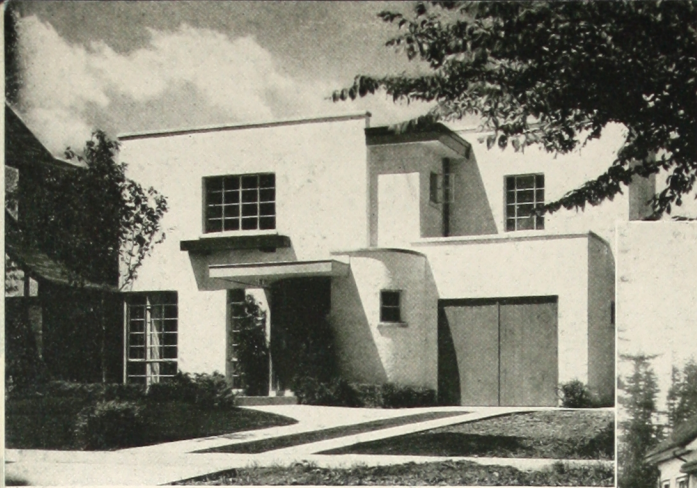
Feathering with square trowel



Pinched off in all directions

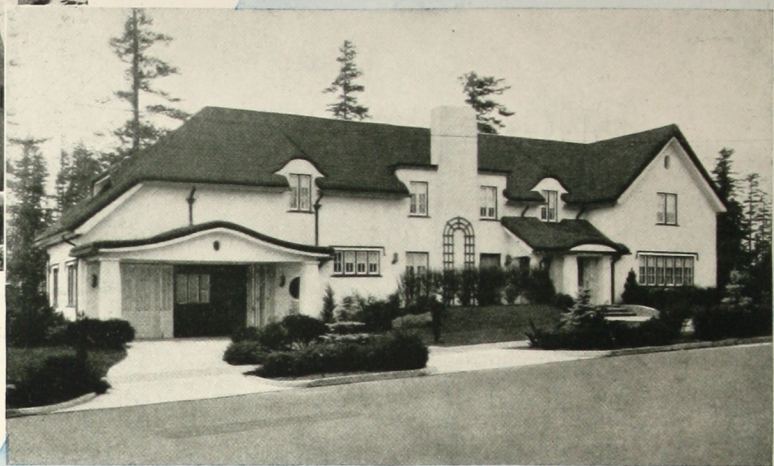
Showing small trowel of mortar





LA GRANGE, ILLINOIS

PORTLAND, OREGON



MIAMI BEACH, FLORIDA.
AFTER 20 YEARS

EDGEWATER BEACH HOTEL
CHICAGO, ILLINOIS

OAK PARK, ILLINOIS. AFTER 30 YEARS



BEAUTY AND ECONOMY

IN addition to stability, the properties most expected from the walls of a building are beauty, long life and economy of upkeep. What material can give these qualities in so full a measure as portland cement stucco?

These pictures tell the story graphically and truthfully. Here are new houses, stuccoed to preserve their beauty—stuccoed houses which have given 20 to 30 years of service without a cent for upkeep—stuccoed buildings north and south, withstanding frigid winters, blistering summers, driving rains and parching sun.

Indeed stucco is a material that knows neither geographical boundaries nor limitations in architectural design.



WALNUT LAKE, MICHIGAN



MINNEAPOLIS, MINNESOTA

LOS ANGELES, CALIFORNIA. AFTER 20 YEARS



BEVERLY HILLS, CALIFORNIA





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COLONIAL

Simplicity of design, outstanding in Colonial architecture, is accentuated by the regular finish and light colors of this texture. White, ivory and pale cream are favored.

COLONIAL

AS THE Colonial or sand-floated texture is one of the most popular finishes, every plasterer should be well acquainted with the best method of making it. To get a regular, even surface a very thin coat of finish should be used. This is applied and spread as shown in Fig. 1. The browning coat has been rubbed over with the wood float, using a circular motion (Fig. 2) which produces the even, but comparatively coarse surface shown.

When the browning coat is completely dry a thin and tight finish coat is spread (Fig. 3). Again using the circular motion, but this time with a carpet float, this coat is thoroughly rubbed down (Fig. 4). As it is being carpet-floated the surface should be sprinkled with a plasterer's brush dipped occasionally into a pail of water (Fig. 4). This carpet rub results in an even, smooth texture with light markings of the circular rubbing showing. A surface so finished has much more life to it than a plain sand-floated texture would have, the slight wetting softening the surface and exposing the sand particles of the mortar for an interesting finish.



Applying browning coat



Floating browning coat



Applying finishing coat

Carpet floating





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AMERICAN

This rough-torn texture of buff color can be given an interesting tapestry effect as shown here by lightly drawing a brush of a colored stain across its surface.

AMERICAN

USING the trowel, the full depth ($\frac{1}{4}$ -inch) of coat is applied (Fig. 1 and 2). It is troweled to a fairly smooth finish but without regard to slight trowel markings (Fig. 3). Then, using an ordinary piece of board, say 10 inches in length, this surface is rough torn by drawing the board up the face of the wall. A downward stroke in tearing the surface must never be used. The method of thus tearing the surface is illustrated in Fig. 4. To lightly tear the troweled surface, the board may be held in one hand; if a heavier texture is required both hands should be used. Tilt the board at an angle with the wall as it is drawn up. The correct method is found by trying different holds and positions best suited to create an evenly torn surface similar to that in Fig. 4.

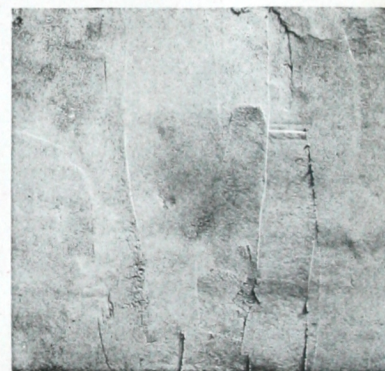
The general effect of this texture is that of tapestry. This effect can be heightened by means of color, using a different shade of mineral coloring pigment than is used in the mortar and tipping the higher points by lightly drawing the brush over the finished surface.



The covering application

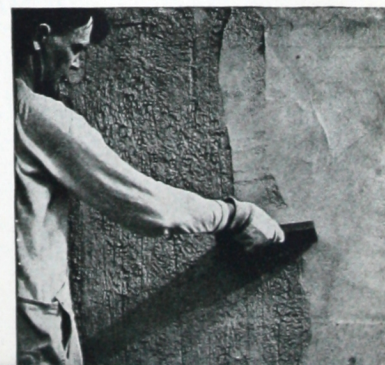


Full upward placing



Preliminary finish

Final finish





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ENGLISH

The shades generally used are the heavier tones of dark red or grey, which are in keeping with the architectural style, enhancing the soft, heavy texture so appropriately used with this manner.

ENGLISH

VARIATIONS in this type of texture, from the leaf-like English Cottage finish to the one described here, are many. This is, perhaps, the heaviest in form and texture that might be used and is suitable only on large, rambling structures where distance smooths out details. The wood float is used to apply the mortar coat, which varies from $\frac{1}{4}$ to $\frac{1}{2}$ inch thick. The stroke is short as the mortar spread is little and in all directions, overlapping occurring wherever it may in placing the mortar (Fig. 3). The use of the float leaves a torn surface where each stroke is applied.

Following the application over a small area the finish should be softened somewhat by being brushed down with a plasterer's ordinary soft brush. Horizontal sweeps, with the brush held as in Fig. 4 are used. This uniformly curves over the rough projecting edges left by the float, rounds off the harsher lines into soft curves and smooths the surface to its final appearance.



A spreading sweep



A full trowel of mortar



Irregular, overlapping strokes

Trowel-marking essential





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ENGLISH TROWEL

A full trowel-swept texture, finished in the typical French grey shade, truthfully displays the technique of application. Slight tints of color add warmth.

FRENCH TROWEL

THE finish coat for French Trowel requires a full, free stroke of the trowel in one general but varied direction (Fig. 1, 2 and 3). A full trowel of mortar is used and the stroke carried through until the mortar runs out to a feather edge (Fig. 3). Trowel marks should not be hidden; on the contrary these are emphasized for the display of the texture. Each succeeding band of mortar as applied laps the edge of the finish coat already placed by perhaps half a trowel length (Fig. 4) creating an irregular series of ridged edges or markings with alternate valleys or depressions. An occasional deliberate cross stroke (Fig. 4) artistically breaks any monotony of direction.

Once a stroke is made there should be no return for smoothing, as this texture relies upon a clear picture of the method of application for its beauty and unusual character and any "retouching" strokes make the effect commonplace and ineffective. The upward right direction is most commonly used as the most natural stroke for covering a surface.

The surface may be rubbed with a sack or brush or left as finished with the trowel. Rubbing of the surface tends to soften the lines thus producing another pleasing texture.



A spreading sweep



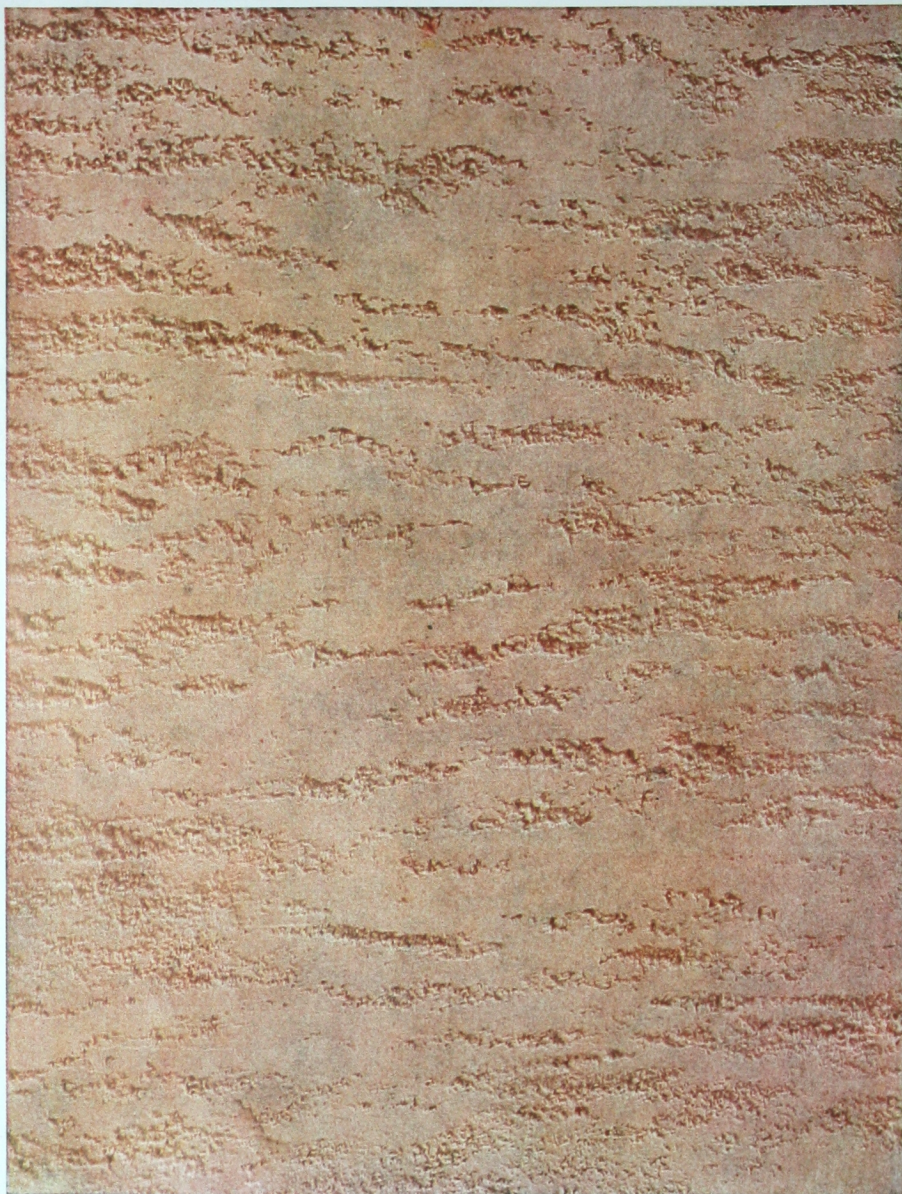
A full trowel of mortar



Irregular, overlapping strokes

Trowel-marking essential





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ITALIAN TRAVERTINE

A representation in stucco, of Travertine stone quarried in Italy. Lines may be cut into the surface to produce the effect of masonry. This texture will harmonize with various architectural designs and many color effects may be used effectively.

ITALIAN TRAVERTINE

TO CREATE this texture successfully it is necessary that the finish coat of mortar have good plasticity, so the second coat should be well sprinkled just before the finish coat is applied to kill part of the suction. The finish coat then is applied about $\frac{3}{8}$ -inch thick and troweled fairly smooth (Fig. 1). Then, using an ordinary whiskbroom, the fresh surface is stippled deeply (Fig. 2) pulling up an irregular texture on the surface of the mortar. This stippling should not be too regular in appearance, as the spacing and arrangement of the broom marks are to show the irregular markings of the Italian Travertine, which is without regular lines or design (Fig. 3). In stippling, the whiskbroom should be held at an angle (Fig. 2) to the surface of the wall to produce the hillocks and hollows which, when troweled, form the veined markings of this texture.

Using the trowel flat against the wall, smooth down with fairly strong pressure the higher portions of the coat to a plain surface (Fig. 4). No trowel marks should be left on the finished surface. The lower depressions made by stippling, however, remain in the finish and in combination with the troweled areas create a very real effect of Travertine stone.

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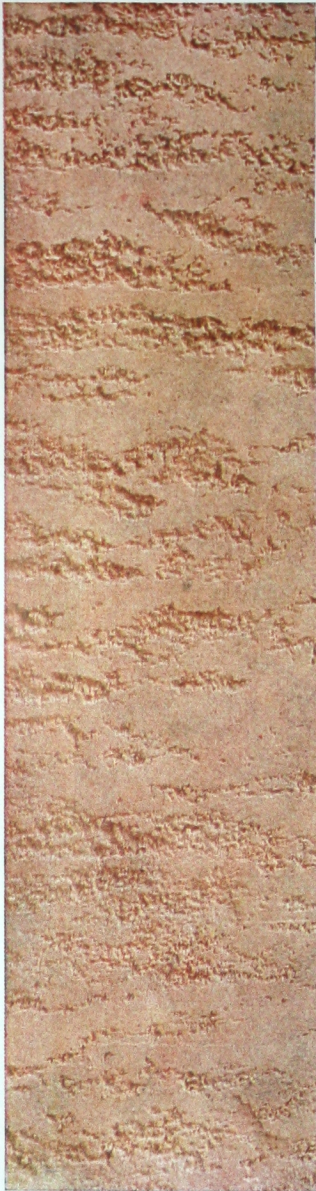
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*troweling in finish texture to pre-
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PORTLAND CEMENT STUCCO WALLS—SPECIFICATIONS



or other fixed supports
in place previous to

the following locations
y stucco: At the tops
where projecting trim
lls; at all intersections
gutters and around all
where flashing would
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and corrosion resisting

have a slope on the
lower surface. Joints

horizontal surfaces shall
Whenever stucco is used
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N BASES

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ot be oiled or greased.

Cast-in-place concrete surfaces shall be entirely free from dust, dirt or loose particles. Cast-in-place concrete surfaces shall be covered with a bond coat of portland cement grout as described below or shall be roughened or treated by any approved means to provide a strong mechanical key for the stucco.

Grout for bond coat shall be composed of 1 volume of portland cement to 1½ volumes of fine sand, with enough water added to form a mix of mushy consistency. It shall be forcibly dashed on the wall using a stiff fiber brush with a whipping motion. (This coat shall be kept damp for at least 2 days immediately following its application and then allowed to dry thoroughly.)

9. Sheathed and Open Frame Construction: Minimum size of studs shall be 2x4 in. (nominal size). Spacing of studs shall not exceed 16 in. on center for sheathed or back-plastered construction, and 12 in. on center for open construction. At corners and around openings, studs shall be double. Trussing shall be provided over openings which are more than 4 ft. wide. Corners shall be diagonally braced. Studs shall be cross-brided with 2x4-in. braces at least once in each story height.

Wood sheathing shall not be more than 8 in. wide, shall be applied horizontally and be securely fastened with 2 nails at each bearing. (Other accepted types of sheathing may be used in lieu of wood sheathing.) Wood or fiber sheathing shall be covered with an approved waterproof building paper or felt weighing not less than 15 lb. per 100 sq.ft. Each strip shall lap the strip below and adjacent flashings at least 3 in.

In open frame construction (not to be back-plastered) studs shall have parallel strands of No. 18 gage or heavier wire stretched tightly across their faces at 8-in. intervals. A waterproof building paper shall be laid and secured over these wires to serve as a backing in applying the scratch coat.

10. Metal reinforcement shall be applied with long dimensions at right angles to supports and shall be securely attached to sheathing or studs at not more than 8-in. intervals with approved type furring nails (such nails shall have penetration into supports of not less than 1 in.) or other approved devices which hold the reinforcement away from the backing and/or supports at least ¼ in. Reinforcement shall be lapped at least 2 in. at sides and ends. Lapping of ends of metal reinforcement shall be staggered. Metal reinforcement shall be returned around corners at least 4 in. in sheathed construction and at least 1 stud opening in open frame construction. In open frame construction vertical laps shall occur over studs and horizontal laps shall be tied at not to exceed 9-in. intervals.

11. Metal Reinforcement: Metal reinforcement for stucco shall be one of the following types:

- a. An expanded metal, cut from zinc-coated steel sheets or steel sheets coated after cutting with rust resisting paint, with openings not less than ¾ in. in the

ITALIAN TRAVERTINE

small dimension nor more than 3 in. in the large dimension and not exceeding 4 sq.in. in area and weighing not less than 1.8 lb. per sq.yd.; or

b. Welded wire fabric or stucco netting coated with zinc or rust resisting paint, with openings not less than $\frac{3}{4}$ in. in the small dimension nor more than 3 in. in the large dimension and not exceeding 4 sq.in. in area and weighing not less than 20 lb. per 100 sq.ft.

DETAIL REQUIREMENTS ON MATERIALS

12. Portland cement shall conform to the current standard specifications of the American Society for Testing Materials.

13. Aggregate shall be clean natural sand, or prepared from stone or blast furnace slag, free from harmful amounts of loam, silt, soluble salts and vegetable matter and shall conform to the requirements of the current American Society for Testing Materials specifications for concrete sand, except that it shall be graded within the following limitations:

- Passing No. 4 sieve, 100 per cent
- Passing No. 8 sieve, 80 to 98 per cent
- Passing No. 16 sieve, 60 to 90 per cent
- Passing No. 30 sieve, 35 to 70 per cent
- Passing No. 50 sieve, 10 to 30 per cent
- Passing No. 100 sieve, not more than 10 per cent

14. Water shall be clean and fit to drink.

15. Coloring shall be commercially pure mineral oxides which are guaranteed by the manufacturer to be unaffected by lime, cement or actions of the elements.

16. Lime shall conform to the current standard specifications of the American Society for Testing Materials and be used in the form of a lime putty when added to the stucco mix.

Slaking of lime for complete hydration shall be in accordance with manufacturer's recommendation except that the soaking or aging periods shall be not less than 7 days for lump quicklime, 72 hours for pulverized lime or 24 hours for hydrated lime. All lime putty shall be kept moist until used.

17. Factory-mixed portland cement stucco shall be guaranteed by the manufacturer to comply with the general requirements of the current Specifications for Finish Coat Portland Cement Stucco of the American Concrete Institute.

DETAIL REQUIREMENTS ON MIXING, APPLICATION AND CURING

18. Mortar for base coats (scratch and brown) shall be mixed in proportions of 1 volume portland cement to not less than 3 volumes of damp, loose aggregate. If necessary to improve the working quality of the mortar, lime putty not to exceed $\frac{1}{4}$ volume or 2 to 3 lb. of diatomaceous earth, clay or similar admixtures may be added to the mix. *NOTE: Some portland cements prepared for use in stucco contain the proper amount of plasticizing material ground in with the cement by the manufacturer at the mill. Where such cements are used it is unnecessary to add a plasticizing admixture on the job.*

Measurements of ingredients shall be accurate and successive batches shall be proportioned exactly alike. Aggre-

gates, cement and other dry ingredients shall be mixed thoroughly before water is added.

19. Grout coat for use on cast-in-place concrete shall be in proportions of 1 volume of portland cement to $1\frac{1}{2}$ volumes of fine sand with enough water added to form a mix of mushy consistency.

20. Factory-mixed stucco (for finish coat) shall be applied in accordance with the manufacturer's recommendations.

21. Job-mixed finish coat mortar shall be mixed in the same proportions of portland cement to aggregate as specified for base coats and with grading of aggregate that will produce the specified texture and color. Not more than 6 per cent of mineral oxide color by weight of cement shall be added to job-mixed finish coat mortar. *NOTE: White portland cement and light colored aggregates should be used where light colored finishes and greatest purity of color are desired.*

22. Immediately preceding the application of stucco to masonry or cast-in-place concrete the surface of the wall shall be thoroughly and evenly dampened, but not saturated. Masonry or cast-in-place concrete shall not be covered with any application which tends to seal the pores on the surface.

The stucco mortar shall be forced tightly into interstices and pores of masonry and cast-in-place concrete surfaces. In the application of stucco over metal reinforcement the mortar shall be forced through the openings so as to completely embed the metal.

23. All stucco shall be three-coat work except over cast-in-place concrete.

The scratch (first) coat shall be approximately $\frac{3}{8}$ in. thick and be applied with sufficient material and pressure to form good mechanical keys on metal reinforcement and a good bond with masonry surfaces. It shall be evenly scored to provide bond for the following coat.

The brown (second) coat shall be approximately $\frac{3}{8}$ in. thick and straightened to a true surface by floating or rodding and left rough ready to receive the finish coat. It shall be applied after the scratch coat has set firm and hard but not sooner than 24 hours after the application of the scratch coat.

The finish coat shall be applied not sooner than 7 days after the preceding coat (an even longer waiting period is preferred) and shall be approximately $\frac{1}{8}$ in. thick, of color and texture as selected by the architect or owner.

NOTE: Avoid over-troweling in finish texture to prevent crazing and map cracking. A rough float is more suitable for stucco than smooth float or trowel finishes.

24. Stucco on cast-in-place concrete shall be two-coat work. The first coat shall be the bond coat as required in Section 8. The finish coat shall be approximately $\frac{3}{8}$ in. thick and shall be of such color and texture as selected by architect or owner.

25. Each coat of stucco shall be kept damp subsequent to its application and protected from drying rapidly. Brown and finish coats shall be kept damp continuously for at least 2 days following application. Each coat of stucco shall be evenly dampened but not saturated before application of the following coat.

26. In cold weather provisions shall be made to keep the stucco at a temperature of 50 deg. F. or above during application and for a period of at least 2 days thereafter.



BEFORE



AFTER

MODERNIZING WITH STUCCO

SOME buildings, though structurally sound, have a run-down, worn-out look as though they were waiting for the wrecker to end it all. Treated to an attractive exterior of portland cement stucco, many such structures have been given new beauty and prolonged, useful life.

The cost of applying stucco over the old surface is more than offset by the resultant increase in property value. Modernizing old buildings with stucco pays dividends through their improved rentability and higher income.

Telltale architectural evidences of age are easily erased by an attractive stucco "overcoat". The building acquires new style. Insulation value is added, fire resistance is increased—and upkeep expense is reduced.

From the variety of colors and textures shown

in this book, it is simple to choose an appropriate stucco treatment.

In stuccoing over old walls, loose sheathing or siding should be firmly renailed and waterproof building paper applied over the old surface. Apply metal reinforcement in accordance with specifications on page 28. Over old stucco, nail metal reinforcement to the wall studs.

Window and door facings, window sills and other trim should be built out to give proper projection and provide a weathertight joint between the stucco and such trim.

Where masonry or old stucco surfaces are to be stuccoed direct, they should be cleaned by brushing or acid washing; all dirt, loose particles and any soft or foreign material likely to interfere with the bonding of the new stucco to the old surfaces should be removed.

ADDITIONAL STUCCO TEXTURES





Before



After





Several types of furring nails—to accommodate practically any type of metal reinforcement.

*a separate
feature*

A QUALITY PRODUCT

THIS book discusses only portland cement stucco, so called because portland cement is used as the binder, the same material which gives concrete its strength, durability and other excellent properties.

Not all the stuccos on the market use portland cement as the binder or cementing material, consequently, cannot be expected to give the same dependable results. The architect and owner, therefore, should specify only portland cement stucco and make certain that no other kind is used. Then the beautiful textures illustrated and described in this book can be faithfully reproduced with the assurance that the results will endure.

PREPARED PORTLAND CEMENT STUCCO

In early days mortar for the base and finish coats was mixed on the job. This method is still commonly followed in preparing mortar for the base coats. However, an increasing amount of finish coat stucco is today prepared in factories especially equipped for measuring and mixing the ingredients. To these factory-mixed finish coat stuccos, only water is added on the job. Ordinarily they produce a more uniform product and color.

COLORS

It is practically impossible to arrive at definite formulae applying to the use of color pigments since variations in color of sands, as well as in pigments themselves make formulae but approximations. Best results are obtained by experiment or trial. Small panels should be made using different percentages of pigments with uniform methods of mixing.

Polychrome effects add pleasant variety with certain textures. To produce these an amount of each of the colored mortars may be placed separately on the mortar board and smaller amounts from each pile laid together on the hawk. Then with the trowel, cut through and apply this vari-colored mortar mixture to the wall. Or colors may be blended by combining the amounts of colored mortars on the mortar board and proceeding as usual.

For light or pastel colors and to obtain maximum clearness of color, white portland cement should be used in the finish coat. White finishes are obtained by using white portland cement and light colored aggregate.

A general guide to the selection of colors follows: Brown—use burnt umber or brown oxide of iron. Yellow oxide of iron may be added to obtain modification of this color. Buff—use yellow ochre or yellow oxide of iron. Red oxide of iron may be added in limited quantities. Gray—use small quantities of black iron oxide, manganese black or Germantown lampblack. Green—use chromium oxide. Yellow oxide of iron may be added. Pink—use small quantity of red oxide of iron. Rose—use red oxide of iron. Cream—use small quantity yellow oxide of iron.

PORTLAND CEMENT ASSOCIATION

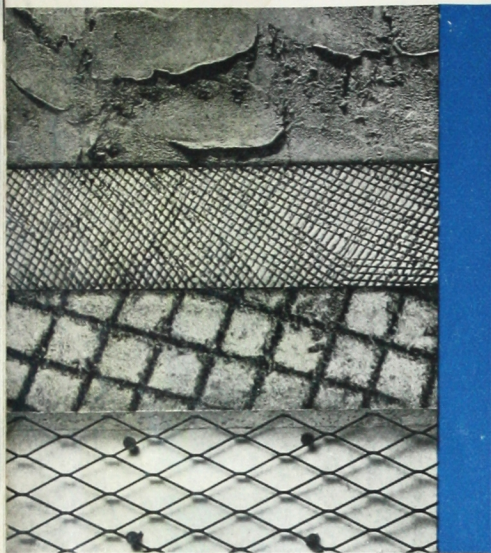
A National Organization to Improve and Extend the Uses of Concrete

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Portland Cement Stucco on Frame Construction. Each coat of stucco should be heavily scored to provide a good bonding surface for the succeeding coat. No coat should be applied until the preceding one has thoroughly cured.

Portland Cement Stucco on Concrete Masonry. Stucco and masonry bond perfectly, because each is made of the same basic material—portland cement. Each coat must be given two days for damp curing and then allowed to dry.

